CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 91-137

SITE CLEANUP REQUIREMENTS FOR:

NATIONAL SEMICONDUCTOR CORPORATION,
UNITED TECHNOLOGIES CORPORATION,
HEWLETT-PACKARD, AND SHAHINIAN TRUST
SUBUNIT 1, OPERABLE UNIT 1
SANTA CLARA AND SUNNYVALE
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. **Study Area, Operable Unit and Subunit Locations and Descriptions** A Study Area containing numerous sources of soil and ground water contamination in western Santa Clara and eastern Sunnyvale is shown in Figure 1. The Study Area is located in an area of low to flat relief about 6 miles south of San Francisco Bay (see Figure 2). This is an industrial park setting dominated by low rise industrial buildings common in the electronics industry of Santa Clara County. Mixed commercial and light industrial use is common immediately surrounding the industrial park area. Some residential property lies at the northern edge of the Study Area: south of Highway 101, west of Lawrence Expressway and north of Highway 101, east of Lawrence Expressway.

   This Study Area has been divided into Operable Units 1 and 2 because of additional field work necessary to define the ground water contaminant plumes originating from facilities in Operable Unit 2 and to determine the extent that these contaminant plumes may be commingled with those plumes originating from facilities in Operable Unit 1. Operable Unit 1 comprises the eastern portion of the Study Area as shown in Figure 1.

   The advantage of defining these two operable units is that facilities in Operable Unit 1 may proceed with final cleanup without awaiting the results of further characterization work in Operable Unit 2. The necessity for additional field work in Operable Unit 2 renders the boundaries of the Study Area incomplete and the boundaries of Operable Unit 1 inexact because additional information generated for Operable Unit 2 may alter the Units' boundaries. It is the Board's intent that the boundaries of the operable units be defined such that, commingling notwithstanding, facilities located in Operable Unit 1 are largely responsible for soil and ground water contamination in Operable Unit 1, and facilities located in Operable Unit 2 are largely responsible for soil and ground water contamination in Operable Unit 2. As additional information is generated for Operable Unit 2 and the Study Area, this intention may lead the Board to modify the Units' boundaries, this order, and the list of dischargers named in this order.

   Three facilities are located in Operable Unit 1 and for purposes of allocating responsibility for soil

and ground water contamination among these facilities, Operable Unit 1 has been further subdivided into three subunits as shown in Figure 1. Subunit 1 consists of the National Semiconductor Corporation (NSC) facility at 2900 Semiconductor Drive, Santa Clara and the former United Technologies Corporation (UTC) facility at 1050 Arques Avenue, Sunnyvale, and all downgradient areas to Arques Avenue. Subunit 2 consists of the Advanced Micro Devices (AMD) facility at 1165 and 1175 Arques Avenue, Sunnyvale. Subunit 3 consists of the downgradient area from Subunits 1 and 2 to the extent of the plume and Operable Unit 1, approximately 1400 feet north of Highway 101. As noted above, as additional information is generated for Operable Unit 2 and the Study Area, the Board may modify the Subunits' boundaries.

2. **Regulatory Status** Separate Board Orders have been prepared for each Subunit in Operable Unit 1. The three Board Orders combined comprise the final cleanup plans for Operable Unit 1. As described in Finding 1. above, the three subunits and corresponding three Board Orders facilitate the allocation of responsibility for soil and ground water contamination among the facilities in Operable Unit 1.

The Board will adopt a final Remedial Action Plan (RAP) for Operable Unit 1 after the Board issues a Nonbinding Preliminary Allocation of Responsibility (NBAR) for Operable Unit 1. With the exception of the NBAR requirement, the three Orders comply with all other requirements for a RAP.

On September 14, 1987, NSC and UTC executed an agreement whereby NSC assumed soil and ground water cleanup responsibility for the former UTC facility. Hewlett-Packard (HP) has owned the former UTC facility since 1982. UTC, as the party who released contaminants to the soil and ground water at the former UTC facility, and HP, as the current owner of the former UTC facility, are both named as dischargers. However, NSC has assumed full responsibility to complete all necessary soil and ground water remedial action programs related to the former UTC facility and the ground water plume emanating from that facility.

NSC notified the Board on July 12, 1991 that one of the source areas at the NSC facility, Building 19, was owned by the Shahinian Trust (ST). ST was notified on July 26, 1991 that, as landowner of Building 19, ST is secondarily responsible for the cleanup of soil and ground water contamination emanating from NSC's Building 19 source area.

Therefore, with the exception of Provision C.3.b. and c. relative to the former UTC facility and NSC's Building 19, UTC, HP, and ST are secondarily liable and have responsibility for the soil and ground water cleanup only in the event that NSC fails to comply with prohibitions, specifications, and provisions of this Board Order. NSC, UTC, HP, and ST are hereinafter referred to as dischargers.

Pursuant to California Health and Safety Code Sections 25356.1 (c) and (d), the identified responsible parties associated with the release of contaminants to the subsurface in Subunit 1 are NSC, UTC, HP, and ST. As described in the preceding paragraph, NSC has assumed full responsibility to complete all necessary remedial action programs related to Subunit 1 and the ground water plume emanating from these facilities within Subunit 1.

The purpose of final remedial actions in each subunit is to reduce additional migration of contaminants from soil into ground water and to control the migration of contaminated ground water from each subunit. The intent of actions required in this Order is to expedite cleanup of ground water in Subunit 1 and to prevent movement of contaminated ground water to other subunits and potential vertical migration into aquifers that currently serve as drinking water sources.

3. **Lead Agency** NSC is a Superfund site on the National Priorities List (NPL). Pursuant to the South Bay Multi-Site Cooperative Agreement (MSCA) and the South Bay Ground Water Contamination Enforcement Agreement, entered into on May 2, 1985 (as subsequently amended) by the Board, EPA, and the California Department of Health Services (DHS), the Board has been acting as the lead regulatory agency.

   This Order is intended to outline a proposed plan for the final remedial actions in Subunit 1 in Operable Unit 1 as required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA). If EPA concurs with the selected remedy, it will issue a Record of Decision. The Board will continue to regulate the dischargers' remediation and administer enforcement actions in accordance with CERCLA as amended by SARA, the California Water Code, California Health and Safety Code, and regulations adopted thereunder.

4. **Nonbinding Preliminary Allocation of Responsibility** NSC and AMD were requested to submit a joint draft nonbinding preliminary allocation of responsibility (NBAR) report that contained a percentage-based allocation of responsibility for cleanup of NSC's (which includes the contribution from the former UTC facility) and AMD's commingled plumes. In May 1991, NSC and AMD submitted separate draft NBAR reports which allocated responsibility very differently among NSC and AMD and also allocated some responsibility to other parties. These draft NBAR reports were deficient in that they were separate, rather than joint, reports that used differing assumptions to allocate responsibility. NSC's draft NBAR report, dated May 13, 1991, allocated responsibility to NSC, UTC, AMD, New England Mutual Life Insurance Company (NEM), M/A-COM Inc., Ametek Inc., and Bank of America. NSC's draft report discussed, but did not allocate responsibility to, parties associated with HP, Mohawk Laboratories, City of Sunnyvale Corporation Yard, Modern Machine Company, Proto Engineering Corporation, Western Precision, Mobil Oil Corporation, and Arco Petroleum Products Company sites. AMD's draft NBAR report, dated May 13, 1991, allocated responsibility to NSC, UTC, and AMD. AMD's draft NBAR report identified but did not allocate responsibility to HP, NEM, InPrint Corporation, Mohawk Laboratories, and CAE-Link as Potentially Responsible Parties (PRP's). The Board will defer completion of the final NBAR determination until such time that the draft NBAR reports are revised pursuant to Provision C.3.n. to use similar assumptions, to apply any new information generated during further investigations in the Study Area, and incorporate any new guidance promulgated on the NBAR process.

   The Board will adopt a final RAP for Operable Unit 1 after the Board issues an NBAR for Operable Unit 1. The Board acknowledges and intends that responsible parties for sites at which contaminants have been released and commingled with the Operable Unit 1 plume be included in the NBAR determination, regardless of whether such parties are named as dischargers on any

order issued by the Board with respect to Operable Unit 1.

5. **Subunit 1 Regulatory Chronology** Facilities in Subunit 1 have been regulated by Board Orders, as indicated herein:

a.	May 1985	Board issued NPDES permit CA0028835 for discharges of extracted ground water from NSC's onsite treatment system in Subunit 1
b.	August 1986	Board adopted Waste Discharge Requirements for NSC
c.	September 1986	Board adopted Waste Discharge Requirements for UTC
d.	March 1987	Board issued revised NPDES permit CA0028835 for discharge of extracted ground water from NSC's onsite and offsite treatment systems in Subunit 1
e.	July 1987	NSC added to the final NPL
f.	February 1988	Board adopted Site Cleanup Requirements for NSC
g.	April 1989	Board adopted revised Site Cleanup Requirements for NSC

6. **Subunit 1 Facility Descriptions** The NSC facility is located on a 60-acre parcel and comprises over 20 buildings containing administrative offices, laboratories, and production facilities. The NSC facility is bounded by Central Expressway on the north, Lawrence Expressway on the east, Kifer Road on the south, and by a property line about 1000 feet east of Commercial Avenue on the west. NSC has manufactured semiconductors at this facility since 1967. Virgin solvents and acids used in semiconductor manufacturing processes were and are stored in aboveground tanks and storage drums. Waste solvents have been stored in underground tanks and above-ground drums. Acid wastes have been treated in underground sumps and aboveground neutralization tanks.

Seven properties at the NSC facility within Subunit 1 are leased, rather than owned, by NSC. These owners are: US West Financial Services Inc. (Building E), Renault and Handley (Buildings 1 and 27), Elwyn Porter (Building 11), Shahinian Trust (Building 19), Kifer Investments Company and Renault and Handley (Building 31), and Bruce Patterson - Trustee (Building 35).

The former UTC facility is a 10-acre parcel located approximately 200 feet northwest of the NSC facility. The former UTC facility is bounded by Central Expressway on the south, Arques Avenue on the north, HP property on the west, and the O'Donnell Brigham property to the east. The former UTC facility, which consisted of two buildings, was used for research, development, and small-scale testing of rocket propellants from 1960 to 1982. HP bought the property from UTC in 1982 and removed the UTC buildings and auxiliary facilities. HP subsequently constructed a park, conference facility, and parking facilities at that location.

7. **Facility Investigation Histories** In early 1982, NSC initiated a preliminary assessment of soil and ground water near its facility's underground solvent storage tanks and acid neutralization sumps. After the preliminary assessment was completed, NSC removed some of the tanks and sumps and soil from some of the areas having elevated concentrations of solvents. Additional tanks and sumps have been removed at the facility since that time. Soil samples have been collected as late as December 1990 to determine whether additional source areas remain at the facility. In 1984, NSC installed, as an interim remedial measure, an onsite ground water extraction and treatment system. In 1986, an offsite extraction and treatment system was installed. This system was expanded in 1988 by installing extraction wells along Arques Avenue and at the former UTC facility.

   At the former UTC facility, UTC used several outdoor areas for chemical drum storage and/or rocket propellant testing. In addition, three underground flow-through acid neutralization sumps were used. Although HP has removed all of UTC's buildings and auxiliary facilities, recent investigations show that there are still areas that have elevated concentrations of solvents in the soil at this facility.

8. **Remedial Investigation/Feasibility Study (RI/FS) Reports and Proposed Final Remedy** NSC submitted a Final RI Report, May 31, 1991 and a Final FS Report June 14, 1991. These reports satisfy the requirements of Board Order No. 89-62, Site Cleanup Requirements, adopted by the Board April 19, 1989. The FS report includes a detailed screening of alternatives for soil and groundwater remedial actions and a summary of the baseline public health assessment for Subunits 1 and 3.

   The technical information contained in the RI/FS Reports and the Board's Proposed Plan Fact Sheet is consistent with the Health and Safety Code requirements for a final RAP and the National Contingency Plan requirements for a RI/FS. The RI/FS Reports contain an evaluation of applicable or relevant and appropriate requirements (ARARs), the interim remedial actions, final remedial alternatives, and proposed remedial standards.

9. **Regional Hydrogeology** Facilities in Subunit 1 are located in the Santa Clara Valley which extends southeast from San Francisco Bay and is bounded by the Diablo Range on the northeast, and by the Santa Cruz and Gabilan Ranges on the southwest. The Santa Clara Valley is a large structural depression in the Central Coastal Ranges of California. The valley is filled with alluvial and fluvial deposits from the adjacent mountain ranges. These deposits are up to 1500 feet in thickness. At the base of the adjacent mountains, gently sloping alluvial fans of the basin tributaries laterally merge to form an alluvial apron extending into the interior of the basin.

   The Santa Clara Valley ground water basin is divided into two broad areas: 1) the forebay, and 2) the confined area, where Subunit 1 is located. The forebay occurs along the elevated edges of the basin where the basin receives its principal recharge. The confined area is located in the flatter interior portion of the basin and is stratified or divided in individual beds separated by significant aquitards. The confined area is divided into the upper and lower aquifer zones. The division is formed by an extensive regional aquitard that occurs at depths ranging from about 100 feet near the confined area's southern boundary to about 150 to 250 feet in the center of the confined area and beneath San Francisco Bay. Thickness of this regional aquitard varies from

about 20 feet to over 100 feet.

Groundwater from this basin provides up to 50% of the municipal drinking water for the 1.4 million residents of the Santa Clara Valley. In 1989, groundwater accounted for approximately 128,000 of the 315,000 acre feet of drinking water delivered to Santa Clara Valley Water District customers. Municipal water supply wells are generally perforated in the lower aquifer zone.

10. **Subunit 1 Hydrogeology** Stratigraphy in the area surrounding Subunit 1 is characterized by interbedded and interfingering sands, silts and clays. These soils were deposited in complex patterns by fluvial-alluvial systems draining the uplands to the south; sediments were deposited as the streams flowed north toward the Bay.

The nomenclature applied to the water-bearing zones in the Study Area is representative of the hydrogeology within the Santa Clara Groundwater Basin. A number of shallow water-bearing zones are separated from deeper zones by a thick persistent aquitard. The shallow zones may be subdivided into a variety of zones depending upon depth, lithology and lateral persistence. These zones are frequently labeled as A and B aquifer zones (A and B aquifers). The deeper aquifer is commonly referred to as the C aquifer and the clay layer separating the upper and lower water-bearing aquifers is commonly referred to as the B-C aquitard.

Within the Study Area the shallowest water-bearing aquifer has been identified as the A aquifer. The next deeper water-bearing aquifer within the Study Area has been subdivided into three water-bearing aquifers, B1 through B3, based on the depths at which major sand units are encountered. The A aquifer occurs between 5 and 25 feet below ground surface (bgs). The B1 aquifer is encountered between 30 and 45 feet bgs, the B2 aquifer between 50 and 65 feet bgs, and the B3 aquifer between 70 and 90 feet bgs. The ground water gradient in all identified water-bearing aquifer zones is in a general north-northeast direction.

11. **State Board Resolution 88-63** On March 30, 1989, the Board incorporated the State Board Policy of "Sources of Drinking Water" into the Basin Plan. The policy provides for a Municipal and Domestic Supply designation for all waters of the State with some exceptions. Groundwaters of the State are considered to be suitable or potentially suitable for municipal or domestic supply except where: 1) the total dissolved solids in the groundwater exceed 3000 mg/L, and/or 2) the water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day. Based on data submitted by NSC, the Board finds that neither of these two exceptions apply to the A and B aquifers in the Study Area. Thus, the A and B aquifers in Subunit 1 are considered to be potential sources of drinking water.

12. **Vertical Conduit Study** Studies to determine the locations and status of potential vertical conduit wells in the Study Area were conducted in 1986, 1987, and 1989. As a result of the 1986 and 1987 studies, a total of 113 public and private wells that do or did exist in a geographical area, which includes the entire Study Area, were identified. Of the 113 identified wells, the vast majority were considered to be non-risk wells, because they: 1) exist well outside the plume area, 2) are relatively shallow (less than 100 feet deep) and do not penetrate the deep aquifers, or 3) have been documented as properly constructed or decommissioned.

The 1989 study, conducted by NSC, revealed that 22 of the identified wells could be considered potential vertical conduits. Of these 22 identified wells, property owner or third party contacts were completed for 11 of the wells; however, none of these contacts yielded information about the existence or locations of wells. A field program was performed to identify the locations of any buried well casings. A visual reconnaissance identified that only 11 of the 22 wells appeared to be located in areas within the extent of the ground water plume and accessible for geophysical surveys. A surface geophysical survey was performed to assess the existence and locations of the 11 wells. Only one surface anomaly was detected and a downhole geophysical survey was conducted to verify whether the anomaly was indicative of a well casing. The measured data from this survey indicated that the magnetic anomaly appears to be from a shallow metallic object and not a metallic well casing. As such, it appears that vertical conduit wells are no longer a problem in the Study Area.

13. **Non-Conduit Deep Wells** Two deep water production wells exist within the Study Area, Well CWW 20-02 and the Hilton Well. The City of Santa Clara owns and operates water production well CWW 20-02, located near the intersection of Semiconductor Drive and Tahoe Way, on the NSC facility. During the work week (Monday through Friday), the well supplies water to NSC's deionized water system; however, 10 to 20 percent of the water produced by the well goes to the City of Santa Clara and is used to supplement the City water supply. According to the City of Santa Clara, water from Well CWW 20-02 is blended with water from 20 other wells in the distribution system.

Well CWW 20-02 was installed in October 1980. The well extends from ground surface to a depth of 660 feet and is screened in eight places across aquifers that range in depth from 265 to 639 feet. The well has a sanitary seal which extends from ground surface to a depth of 110 feet. The City of Santa Clara performs monthly well water analyses on Well CWW 20-02. Cis-1,2-DCE has been detected at concentrations ranging from 0.5 to 0.7 ppb from May 1986 through June 1989. This chemical was also detected in November and December, 1989, at 0.5 ppb, and has been detected in September 1990 and October 1990 at 0.7 and 0.5 ppb, respectively.

A second deep production well, the Hilton Well, is owned by the Oakmead Lake Industrial Properties Company and was installed in March 24, 1976. The well is located in Subunit 3, at the Sunnyvale Hilton Inn on Lakeside Drive, near Highway 101. The well operates infrequently to provide water to an artificial lake adjacent to the Hilton Inn. The well is 260 feet deep and is screened across aquifers between 115 and 260 feet deep, with a sanitary seal from ground surface to a depth of 50 feet. The well was sampled annually from February 1982 to May 1989 and has since been sampled quarterly. In 1985, ethylbenzene, xylenes, and PCE were detected at concentrations of 10, 14, and 7 ppb, respectively; in 1987 and 1988, cis-1,2-DCE was detected at concentrations of 8.5 and 4.9 ppb, respectively, and in May and July 1990, Freon 113 and cis-1,2-DCE were detected at concentrations ranging from 0.8 to 1 ppb. No VOCs have been detected since then.

14. **NSC Source Investigation** Soil sampling programs at the NSC facility began in 1982 and have been conducted as recently as December 1990, to identify source areas for soil and ground water contamination. Potential source areas investigated have included a variety of acid waste sumps and solvent tanks, leaks in chemical piping, and chemical storage areas. The RI identified 11

source areas that are included for remediation. The principal organic chemicals detected in the soil at the NSC facility are PCE, 1,1,1-TCA, TCE, 1,2-DCE, xylenes, and ethylbenzene.

NSC's Building 19, owned by the Shahinian Trust, is the only property leased by NSC that is a source area. If further investigation indicates that any other leased properties, as described in Finding 6 above, are source areas, the Board may modify this Order to name the owners of such properties as dischargers.

15. **UTC Source Investigation** Several studies were performed between 1982 and 1986 at the former UTC facility to identify potential source areas. In 1990, additional soil investigations consisting of a soil gas survey and soil borings were conducted. The 1990 investigations identified one acid neutralization sump and two chemical storage areas as potential sources of soil and ground water contamination. These areas have been included in the proposed soil remediation for the former UTC facility. The principal organic chemicals detected in the soil at the former UTC facility are 1,1,1-TCA and TCE.

16. **Extent of Ground Water Contamination in Subunit 1** The largest concentrations of organic chemicals are found in the A and B1 aquifers, although organic chemicals have been detected in the B2 aquifer. Analytical data indicate that organic chemicals are not present in the B3 aquifer. The chemicals found in the ground water include halogenated and aromatic VOCs, and to a lesser extent, phenols. Halogenated VOCs, cis-1,2-DCE, 1,1,1-TCA, TCE and Freon 113 are used as indicators for the VOC plume because they are detected in a large number of wells, have elevated concentrations, and are also found in wells downgradient of Subunit 1. These four indicator chemicals are or have been present in the A, B1, and B2 aquifers. Aromatic VOCs are present in the A and B1 aquifers in Subunit 1 and immediately downgradient. Phenols are present in a few A aquifer wells in Subunit 1.

The highest current levels of groundwater contamination in Subunit 1 are about 4,200 ppb TCE, 6,800 ppb of 1,2-DCE, 2,000 ppb of Freon 113, 990 ppb of ethylbenzene, and 11,000 ppb of xylenes. Currently the ground water contamination in Subunit 1 extends to a depth of up to 65 feet.

17. **Baseline Public Health Evaluation** A Baseline Public Health Evaluation (BPHE) is conducted at every Superfund site to evaluate the risk posed by the site in its existing condition. The BPHE examines the chemicals present at the site and the possible routes of exposure to humans and animals. Once the potential risk or hazard from the site is established, judgments can be made as to which environmental laws and standards are applicable to the situation and what cleanup standards are appropriate.

A BPHE was completed July 3, 1990, by Clement Associates Inc., under contract to the Board, for Subunits 1 and 3. Using very conservative assumptions regarding concentration, distribution, toxicity, and potential routes of exposure, the BPHE identified 23 organic chemicals of concern for ground water, 14 organic chemicals and 6 metals as chemicals of concern for soil, and 18 organic chemicals of concern for air. Further evaluation of the soil data in the FS has resulted in the elimination of all the metals as "chemicals of potential concern". The chemicals of concern for Subunit 1 are listed in Table 1.

Using similarly conservative assumptions, the BPHE also developed current and future exposure scenarios. The only current exposure identified in the BPHE is indoor exposure to vapors migrating from the contaminated groundwater in Subunit 3. This pathway was evaluated for residents at the northern edge of the Study Area. These cancer risks and health hazard assessments are based on estimates of the indoor air concentrations of the chemicals of concern predicted by mathematical models. The predicted carcinogenic risk to residents is estimated to be approximately 1 in 10,000,000 for the average case and 1 in 1,000,000 for the plausible maximum case. The model does not predict any noncarcinogenic toxic effects from this exposure. The carcinogenic risk is well within the risk range that would be allowable under EPA guidance after cleanup.

For the hypothetical future exposure scenarios, it was assumed that the NSC facility would be developed for residential use and that the groundwater in the A and B aquifers would be used for domestic purposes. Domestic use is a hypothetical case since shallow groundwater in the A and B aquifers is not currently used for water-supply purposes and local ordinances currently prohibit such practice. According to the BPHE, potential future exposure routes at the NSC facility may include ingestion of groundwater containing the chemicals of potential concern, inhalation of VOC vapors from groundwater during showering or other domestic uses, and inhalation of VOC vapors originating from the groundwater.

The BPHE assumes that there will be no continued or further cleanup in order to evaluate the need for further cleanup. Based on the potential risk identified by the BPHE it is appropriate to cleanup the groundwater. NSC has been cleaning up contaminated groundwater from Subunit 1 since 1984. This Order and actions taken by the Board and other agencies will provide that these efforts will continue.

18. **Chemicals Of Concern** The BPHE identified chemicals of concern for the area roughly encompassing Operable Unit 1, based on toxicity and frequency of detection for soil and groundwater data. New data on inorganics has been collected since the completion of the BPHE. This data indicates that inorganics are not present in soil or ground water in Subunit 1 above naturally occurring levels. Therefore inorganics are no longer considered to be chemicals of concern for Subunit 1.

Chemicals of concern identified for Subunit 1 include benzene, vinyl chloride, chloroform, 1,4-dichlorobenzene, 1,1-DCA, PCE, TCE, pentachlorophenol, 1,1-DCE, chloromethane, 1,2-DCE, 1,1,1-TCA, Freon 113, 1,2-dichlorobenzene, xylenes, and ethylbenzene.

All of these chemicals are potentially toxic above certain concentrations. Benzene and vinyl chloride are categorized as known human carcinogens (EPA class A). Chloroform, 1,4-dichlorobenzene, 1,1-DCA, PCE, TCE, and pentachlorophenol are considered to be potential or probable human carcinogens (EPA class B1 and B2).

19. **Interim Remedial Actions, Soils** Onsite interim remedial actions in Subunit 1 have included removal and disposal of underground storage tanks and acid waste sumps. Approximately 400 cubic yards of chemical-bearing soil have been removed from the NSC facility.

20. **Interim Remedial Actions, Groundwater** In 1984, extraction and treatment of ground water from wells on the NSC facility was implemented as an interim remedial measure. In 1986, an off-site extraction and treatment system was installed. This system was expanded in 1988 by installing extraction wells along Arques Avenue and at the former UTC facility. There are a total of 45 A and B aquifer extraction wells in Subunit 1. However, some of these wells are dry because of water level declines. As of January 1991, 29 A and B aquifer extraction wells were pumping water to the various NSC extraction and treatment systems.

21. **Data Quality** Development of the Board's final cleanup plan was based on four criteria: 1) data was collected following an approved sampling and analysis plan, 2) random sample splits were collected by Board staff to confirm the validity of data generated by NSC, 3) NSC's data was validated by the Department of Health Services and found to be at least qualitatively acceptable, and 4) there has been reasonable repeatability of the data based on nine years of monitoring. Thus the Board finds that there is sufficient acceptable data to make cleanup decisions.

22. **Summary of Remedial Alternatives** The Feasibility Study initially screened numerous remedial action technologies for Subunits 1 and 3. These technologies were screened based on implementability, effectiveness, and cost criteria. The remedial technologies that passed the screening were assembled into a group of alternatives as follows for Subunit 1:

Remedial Alternative 1 - No Further Action

Remedial Alternative 1 is a "no further action" alternative, retained for baseline comparison purposes in accordance with CERCLA/SARA guidance. This alternative involves taking no further action to treat, contain, or remove any of the contaminated soil or ground water in Subunit 1. As such, Remedial Alternative 1 consists of the following elements:

- Deed restriction
- Ground water monitoring

Time to achieve final cleanup standards = > 200 years
Total present worth cost[1] = $ 1,900,000.

Remedial Alternative 2 - No Soil Remediation & Continue Existing Extraction & Treatment Systems

Remedial Alternative 2 consists of the following elements:

- Deed restriction
- Ground water monitoring
- Existing ground water extraction wells in Subunit 1

[1] Total present worth costs have been calculated using a 10% discount rate and assuming 30 years of operation.

- Air stripping of extracted ground water with current treatment systems in Subunit 1 (Towers 1, 9, and C)
- Discharge of treated water to surface water under existing NPDES permit CA0028835

Time to achieve final cleanup standards = > 200 years
Total present worth cost[1] = $ 3,000,000

Remedial Alternative 3 - Soil Remediation & Continue Existing Extraction and Treatment Systems

Remedial Alternative 3 consists of the following elements:

- Deed restriction
- Excavation of areas with surface soil contamination (up to 5 feet below ground surface)
- Offsite disposal or aeration of excavated, contaminated soil at the NSC and/or UTC facilities
- In-situ soil vapor extraction for areas with surface soil contamination greater than 5 feet below ground surface
- Ground water monitoring
- Existing ground water extraction wells in Subunit 1
- Air stripping of extracted ground water with current treatment systems in Subunit 1 (Towers 1, 9, and C)
- Discharge of treated water to surface water under existing NPDES permits CA0028835

Time to achieve final cleanup standards = 50 - 100 years
Total present worth cost[1] = $ 4,600,000

23. **Summary of Evaluation Criteria** This section summarizes the nine evaluation criteria required by EPA to be used to compare the alternatives in the RI/FS. The alternatives were evaluated in detail in the FS Report. A summary of this detailed analysis is shown on Table 2.

a. Overall Protection of Human Health and the Environment addresses whether a remedy provides adequate protection of human health and the environment.

b. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) addresses whether a remedy will meet all of the ARARs or other Federal and State environmental laws.

c. Long-term Effectiveness and Permanence refers to expected residual chemical concentrations after cleanup standards have been met and the ability of a remedy to maintain reliable protection of human health and the environment over time.

d. Reduction of Toxicity, Mobility, or Volume through Treatment refers to the anticipated performance of the treatment technologies a remedy may employ.

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[1] Total present worth costs have been calculated using a 10% discount rate and assuming 30 years of operation.

e. Short-term Effectiveness addresses the period of time needed to achieve cleanup and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until cleanup standards are achieved.

f. Implementability refers to the technical and administrative feasibility of a remedy.

g. Cost includes the present worth value of estimated capital and operation and maintenance costs.

h. Regulatory Agency Acceptance evaluates the administrative and technical issues, regulatory agencies, including the Board and EPA, may have concerning each alternative.

i. Community Acceptance evaluates the public's input and anticipated public reaction to each alternative.

24. **Selected Remedy for Subunit 1** Based on an evaluation of the alternatives described in Finding 22. against the nine criteria described in Finding 23., the selected remedy for Subunit 1 is Alternative No. 3. NSC has estimated that it will take 50 to 100 years to achieve ground water cleanup standards at a cost of $ 4,600,000.

Based primarily on information submitted by NSC in the RI/FS Reports, this Order provides for a final remedy for Subunit 1 that includes:

a. Institutional constraints in the form of a deed restriction. The purpose of the deed restriction is to control site access, prevent the installation of water supply wells in the shallow water-bearing zones, and provide a warning for any subsurface construction activities. The deed restriction would be designed to "run with" the NSC and former UTC facilities to ensure that any potential future site occupants would be aware of the past contamination at these facilities.

b. Excavation of areas within Subunit 1 with surface soil contamination (up to 5 feet below ground surface) and offsite disposal or onsite aeration of excavated, contaminated soil.

c. In-situ soil vapor extraction for areas within Subunit 1 with surface soil contamination greater than 5 feet below ground surface.

d. Completion of soil remediation at facilities in Subunit 1, to achieve the proposed cleanup level of 1 ppm total VOCs, within five years of adoption of this Order.

e. Continued ground water monitoring in Subunit 1 during the cleanup period. Water samples will continue to be collected to verify that cleanup is proceeding and that there is not migration of VOCs, above cleanup standards, into the deeper B3 aquifer. Detailed sampling and reporting requirements will be contained in a revised Field Sampling Plan, to be approved by the Executive Officer.

f. Continued ground water extraction at the existing extraction wells to maintain hydraulic control, to prohibit the further vertical and horizontal migration of the ground water

contamination beyond Subunit 1, and until cleanup standards are achieved in all monitoring and extraction wells in Subunit 1.

g. Air stripping of extracted ground water from current extraction wells with treatment systems in Subunit 1 (Towers 1, 9, and C).

h. Discharge of treated water to Calabazas Creek, under existing NPDES permit CA0028835. The Board finds that the beneficial uses of Calabazas Creek will not be affected by continuing this discharge.

25. **Cleanup Standards** The cleanup standards must meet all applicable, relevant, and appropriate requirements (ARARs) and be protective of human health and the environment. There are no ARARs for soil cleanup. However, the chemicals of concern in soil are the same as those in groundwater, predominantly VOCs. The presence of VOCs at high concentrations would present a continued threat to water quality. The Board has proposed a cleanup standard in the soil of 1 part per million (ppm) total VOCs for vadose zone soils. As an alternative to this cleanup level NSC was given the option of providing a technical demonstration that levels of VOCs greater than 1 ppm could remain in place in the soil without partitioning from soil into groundwater at levels above groundwater cleanup standards. The latter has not been demonstrated for this site.

Cleanup standards for groundwater are defined in Specification B.3. and listed in Table 3. In general, these standards are based on adopted or proposed Federal maximum contaminant levels (MCLs), State MCLs, and State Action Levels, whichever is the lowest, when available. In some cases, cleanup standards were set below MCLs. In these cases, and for those chemicals that do not have MCLs, standards were set so that the cumulative risk associated with the cleanup standards would be within EPA's acceptable levels.

26. **Risk Associated With Cleanup Standards** The proposed remedy is protective of human health and the environment, as required by Section 121 of CERCLA, in that contamination in groundwater is treated to at least MCLs and falls within EPA's acceptable carcinogenic risk range and noncarcinogenic Hazard Index. EPA's acceptable carcinogenic risk range for cleanup standards selected for a site is 10^{-4} to 10^{-6}. If the noncarcinogenic Hazard Index is less than one, EPA considers the combined intake of chemicals unlikely to pose a health risk.

The total carcinogenic risk, summed across the potential future exposure pathways of ingestion and inhalation of VOCs from ground water in Subunit 1, associated with the cleanup standards for the chemicals of concern listed in Table 1, is 3.1×10^{-5}. This risk was calculated using a potential future use scenario with a 30 year exposure duration, per EPA guidance.

The noncarcinogenic Hazard Index associated with the cleanup standards is 0.87. The method and assumptions used to obtain the carcinogenic risk and the Hazard Index associated with the cleanup standards are contained in the BPHE and FS Reports. A number of assumptions have been made in the derivation of these values, many of which are intentional overestimates of exposure and/or toxicity. The actual incidence of cancer is likely to be lower than these estimates and may even be zero. The cleanup standards for the site are protective of human health, have a carcinogenic risk that falls within a range of 10^{-6} to 10^{-4}, and a Hazard Index of less than one.

27. **Uncertainty in Achieving Cleanup Standards** The goal of the final remedy is to restore ground water to its beneficial uses. Based on information obtained during the RI and on a careful analysis of all remedial alternatives, the Board believes that the selected remedy will achieve this goal. However, studies suggest that groundwater extraction and treatment will not be, in all cases, completely successful in reducing contaminants to health-based levels in the aquifer zones. The Board recognizes that operation of the selected extraction and treatment systems may demonstrate the technical impracticability of reaching health-based ground water quality standards using this approach. If it becomes apparent, during implementation or operation of the systems, that contaminant levels have ceased to decline and are remaining constant at levels higher than the cleanup standard(s), these standard(s) and the remedy may be reevaluated. However, any changes to the cleanup standards or remedy will require Board and EPA approval.

28. **Future Changes to Cleanup Levels** If new information indicates cleanup standards cannot be attained or can reasonably be surpassed, the Board will decide if further final cleanup actions, beyond those completed, shall be implemented at this site. If changes in health criteria, administrative requirements, site conditions, or remediation efficiency occur, the dischargers will submit an evaluation of the effects of these changes on cleanup standards as defined in Specification B.3.

The Board recognizes that NSC has already performed extensive investigative and remedial work in Subunit 1 and that NSC is being ordered hereby to perform additional remedial tasks. It is in the public interest to have NSC undertake such remedial actions promptly and without prolonged litigation or the expenditure of public funds. The Board recognizes that an important element in encouraging the dischargers to invest substantial resources in undertaking such remedial actions is to provide the dischargers with reasonable assurances that the remedial actions called for in this Order will be the final remedial actions required to be undertaken by the dischargers. On the other hand, the Board also recognizes its responsibility to protect water quality, public health, and the environment, and that future developments could indicate that some additional remedial actions may be necessary.

The Board has considered and balanced these important considerations, and has determined that the remedial actions ordered herein represent the Board's best, current judgment of the remedial actions to be required of the dischargers. The Board will not require the dischargers to undertake additional remedial actions with respect to the matters previously described herein unless: (1) conditions in Subunit 1, previously unknown to the Board, are discovered after adoption of this Order, or (2) new information is received by the Board, in whole or in part after the date of this Order, and these previously unknown conditions or this new information indicates that the remedial actions required in this Order may not be protective of public health and the environment. The Board will also consider technical practicality, cost effectiveness, State Board Resolution No. 68-16 and other factors evaluated by the Board in issuing this Order in determining whether such additional remedial actions are appropriate and necessary.

29. **Community Involvement** An aggressive Community Relations program has been ongoing for all Santa Clara Valley Superfund sites, including Operable Unit 1. The Board published a notice in the San Jose Mercury News on June 12, 19, and 26, 1991, announcing the proposed final

cleanup plan for Operable Unit 1 and opportunity for public comment at the Board Hearing of June 19, 1991 in Oakland, and announcing the opportunity for public comment at an evening public meeting held at the Fairwood Elementary School Cafeteria, 1110 Fairwood Avenue, in the City of Sunnyvale on Thursday, June 27, 1991. Public comment was received during a 60-day period from June 19, 1991 through August 19, 1991.

Fact Sheets for Operable Unit 1 were mailed to interested residents, local government officials, and media representatives. Fact Sheet 1, mailed in April 1990, summarized the contamination problem, the results of investigations to date, and the interim remedial actions. Fact Sheet 2, mailed in June 1991, described the cleanup alternatives evaluated, explained the proposed final remedy, announced opportunities for public comment at the Board Hearing of June 19, 1991 in Oakland and the Public Meeting of June 27, 1991 in Sunnyvale and described the availability of further information at the Information Repository at the Board offices. The Responsiveness Summary provides responses to significant comments received during the public comment period. Fact Sheet 3, to be mailed in September 1991, will explain the adopted cleanup plan contained in this and the other Orders comprising the final cleanup plan for Operable Unit 1.

30. **State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California"** On October 28, 1968, the State Water Resources Control Board adopted Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California". This policy calls for maintaining the existing high quality of State waters unless it is demonstrated that any change would be consistent with the maximum public benefit and not unreasonably affect beneficial uses. The original discharge of waste to the groundwater in Subunit 1 was in violation of this policy; therefore, the groundwater quality needs to be restored to its original quality to the extent reasonable. For the purpose of establishing cleanup objectives, the shallow groundwater in Subunit 1 is designated a potential source of drinking water (see Finding 11.).

The FS evaluated groundwater cleanup to levels which correspond to a 10^{-6} carcinogenic risk. Cleanup to such levels could increase estimated groundwater cleanup times by 100% or more and add significantly to cost. In addition, cleanup of groundwater to below the MCLs for the chemicals of concern such as TCE, vinyl chloride, 1,1-DCA, PCE, and 1,2-DCE may not be achievable due to the technical difficulties in restoring aquifers by the removal of low concentrations of any VOC. This is due to the slow desorption of VOCs adsorbed to the inner pore spaces of soil particles which make up the aquifer material and VOCs adsorbed to clays and organic matter in the aquitard. Cleanup to MCL levels for chemicals such as TCE, vinyl chloride, 1,1-DCA, PCE, and 1,2-DCE would protect the primary beneficial use of the groundwater as a potential source of drinking water. For these reasons, the cleanup standards were accepted as concentrations which meet the intent of Resolution No. 68-16.

The cleanup standards meet current applicable health criteria and restore the quality of the ground water to the extent reasonable given technical and economic constraints. These constraints include the high additional incremental costs for removal of small amounts of additional chemicals and the need to minimize the removal of ground water due to the drought to achieve acceptable remedial standards.

31. **Groundwater Conservation** NSC has considered the feasibility of reclamation, reuse, or discharge to a publicly owned treatment works (POTW) of treated, extracted groundwater from its existing treatment systems, as specified in Board Resolution No. 88-160. Based on NSC's evaluation, the Board concurs that ground water reclamation, reuse, or discharge to a POTW in Subunit 1 is not feasible.

32. **Administrative Record** The Administrative Record has been prepared in accordance with EPA Guidance, has been made available for public review, and provides the backup documentation for the recommendations of staff and decisions by the Board.

33. **Basin Plan** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and ground waters.

34. **Beneficial Uses** The existing and potential beneficial uses of the groundwater underlying and adjacent to Subunit 1 include:

    a. Industrial process water supply
    b. Industrial service water supply
    c. Municipal and Domestic water supply
    d. Agricultural water supply

35. The selected Remedial Action Plan for Subunit 1 was chosen in accordance with the Health and Safety Code Section 25356.1, CERCLA/SARA, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), California Water Code Section 13304, and pursuant to MSCA. This decision is based on the Administrative Record for Operable Unit 1.

36. The dischargers have caused or permitted, and threaten to cause or permit waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of contamination or nuisance. Containment and cleanup measures need to be continued to alleviate the threat to the environment posed by the continued migration of the ground water plume of contaminants.

37. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

38. The Board has notified the dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

39. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

40. This Order supersedes and rescinds Site Cleanup Order No. 89-62, adopted by the Board April 19, 1989 and Waste Discharge Order No. 86-73, adopted by the Board September 17, 1986.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code and Section 25356.1 of the California Health and Safety Code, that the dischargers, their agents and assigns or successors, shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Further significant migration of contaminants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of contaminants are prohibited.

B. SPECIFICATIONS

1. The storage, handling, treatment or disposal of soil or groundwater containing contaminants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The dischargers shall conduct monitoring activities as outlined in the Field Sampling Plan, approved February 1990, until such time as a revised Field Sampling Plan is approved by the Executive Officer. These monitoring activities will be to define the current local hydrogeologic conditions, and the lateral and vertical extent of ground water contamination. Should monitoring results show evidence of contaminant migration, additional characterization of contaminant extent may be required.

3. Final cleanup standards for all wells in Subunit 1 shall not be greater than the levels described in Finding 25. and listed on Table 3.

4. The dischargers shall implement the final cleanup plan described in Finding 24.

C. PROVISIONS

1. The dischargers shall submit to the Board acceptable monitoring program reports containing results of work performed according to a program as described in the Field

Sampling Plan, approved February 1990, until such time as a revised Field Sampling Plan is approved by the Executive Officer.

2. If NSC fails to comply with any of the provisions of this Order, within sixty (60) days of the Executive Officer's determination and actual notice, UTC, HP, and ST shall comply with the provisions of this Order.

3. The dischargers shall comply with the Prohibitions and Specifications above, in accordance with the following tasks and compliance time schedules:

REVISED FIELD SAMPLING PLAN

a. TASK 1 - REVISED FIELD SAMPLING PLAN: Submit a technical report acceptable to the Executive Officer containing a proposed revised Field Sampling Plan, as described in CERCLA/SARA guidance. This plan should include a schedule for groundwater sampling to satisfy the criteria described in Finding 24.e. and Specification B.2. The revised Field Sampling Plan should also include a proposal for verification sampling for the soil remediation (excavation and vapor extraction) and a schedule for soil sampling that will follow the attainment of soil cleanup standards. This plan should also include analysis by appropriate EPA series 8000 analysis techniques.

COMPLETION DATE: January 31, 1992

INSTITUTIONAL CONSTRAINTS

b. TASK 2 - PROPOSED CONSTRAINTS:

i) NSC shall submit a technical report acceptable to the Executive Officer documenting procedures to be implemented by NSC, including a deed restriction prohibiting the use of the A and B aquifer ground water as a source of drinking water, and for controlling activities at the NSC facility that could endanger the public health or environment due to exposure to VOCs.

ii) HP shall submit a technical report acceptable to the Executive Officer documenting procedures to be implemented by HP, including deed restrictions on land owned by HP, prohibiting the use of the A and B aquifer ground water as a source of drinking water, and for controlling activities at the former UTC facility that could endanger the public health or environment due to exposure to VOCs.

iii) ST shall submit a technical report acceptable to the Executive Officer documenting procedures to be implemented by ST, including deed restrictions on land owned by ST, prohibiting the use of the A and B aquifer ground water as a source of drinking water, and for controlling activities at NSC's Building 19 that could endanger the public health or

environment due to exposure to VOCs.

These constraints shall remain in effect until the groundwater cleanup standards have been achieved and contaminant levels have stabilized in the A and B aquifers in Subunit 1.

COMPLETION DATE: October 30, 1991

c. TASK 3 - CONSTRAINTS IMPLEMENTED: Submit technical reports acceptable to the Executive Officer documenting that the constraints proposed and approved pursuant to Task 2 have been implemented.

COMPLETION DATE: 60 days after Board staff approval of Task 2.

UPDATING ADMINISTRATIVE RECORD

d. TASK 4 - PROPOSED UPDATE: Submit a technical report acceptable to the Executive Officer containing an updated index for the Administrative Record for the period June 19, 1991 through September 30, 1991.

COMPLETION DATE: October 15, 1991

e. TASK 5 - UPDATE ADMINISTRATIVE RECORD: Submit a technical report acceptable to the Executive Officer containing the updated Administrative Record documents for the period June 19, 1991 through September 30, 1991.

COMPLETION DATE: December 1, 1991

SOIL REMEDIATION

f. TASK 6 - SOIL EXCAVATION: Submit a technical report acceptable to the Executive Officer describing the soil excavation in Subunit 1 including a proposed implementation schedule, and name, permit number, and location for offsite soil disposal. This report shall also include analytical limits on soil disposal for chemicals of concern.

COMPLETION DATE: June 30, 1992

g. TASK 7 - SOIL VAPOR EXTRACTION: Submit a technical report acceptable to the Executive Officer containing the proposed plan of soil vapor extraction for all areas to be remediated by this method. This report should include the proposed implementation schedule and specific system layout for each area. The proposed implementation schedule must allow a sufficient amount of time for evaluation of the effectiveness of the system, Board staff review of the required system modification, if necessary, and additional operating time; and should lead to total completion of soil remediation by September 30, 1996.

COMPLETION DATE: January 31, 1992

h. TASK 8 - VAPOR EXTRACTION CURTAILMENT CRITERIA AND PROPOSAL: Submit a technical report acceptable to the Executive Officer containing a proposal for curtailing pumping from any soil vapor extraction well(s) or piping in Subunit 1 and the criteria used to justify such curtailment. This report shall include a proposal indicating the locations of borings and sampling intervals to determine concentrations of VOCs remaining in soil. The proposal may include the temporary termination of vapor extraction well operation for an extended period of time to study the effects on chemical migration prior to well abandonment.

If the dischargers claim that it is not practicable to achieve soil cleanup standards through continued soil vapor extraction in all or any portion of the soil plume area in Subunit 1 and that significant quantities of chemicals are not being removed through soil vapor extraction, the dischargers shall evaluate the reductions in chemical concentrations and the alternative soil cleanup standards that can be practically achieved. The report shall evaluate alternative means of achieving soil cleanup standards and whether conditions for waiving these standards are met (e.g., that meeting the soil cleanup standards is technically impracticable from an engineering perspective) and that the alternative soil cleanup standards proposed will be protective of human health and the environment.

COMPLETION DATE: 90 days prior to proposed curtailment of any soil vapor extraction well or treatment system.

i. TASK 9 - COMPLETION OF SOIL REMEDIATION: Document in a technical report the completion of the necessary tasks identified in the technical report submitted for Tasks 6 and 7. This Report should include the results of chemical analyses of appropriate samples from the excavation(s) and source areas in Subunit 1.

COMPLETION DATE: One month following the completion of all soil remediation activities but no later than October 31, 1996.

HYDRAULIC CONTAINMENT MEASURE

j. TASK 10: EVALUATE EFFECTIVENESS OF HYDRAULIC CONTAINMENT IN SUBUNIT 1: Submit a technical report acceptable to the Executive Officer which evaluates the effectiveness of the Subunit 1 hydraulic containment system. Such an evaluation shall include but not be limited to, an estimation of the capture zone of the extraction wells, establishment of the cones of depression by field measurements, and presentation of chemical monitoring data. A map shall be included in the report that superimposes the capture zone on the contaminant plume for all affected aquifer zones.

Specific modifications to the system and an implementation time schedule shall be proposed in the event that the Subunit 1 hydraulic containment system is demonstrated not to be effective in containing and removing the groundwater pollutants.

COMPLETION DATE: January 31, 1992

k. TASK 11: COMPLETION OF MODIFICATIONS TO SUBUNIT 1 HYDRAULIC CONTAINMENT MEASURES: Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted to fulfill Task 10 above.

COMPLETION DATE: 120 days after Executive Officer approval of Task 10

CURTAILING GROUND WATER EXTRACTION

l. TASK 12 - SUBUNIT 1 WELL PUMPING CURTAILMENT CRITERIA AND PROPOSAL: Submit a technical report acceptable to the Executive Officer containing a proposal for curtailing pumping from groundwater extraction well(s) in Subunit 1 and the criteria used to justify such curtailment. This report shall include data to show that cleanup standards for chemicals of concern have been achieved and have stabilized or are stabilizing, and that the potential for contaminant levels rising above cleanup standards is minimal. This report shall also include an evaluation of the potential for contaminants to migrate downwards to the B3 and lower aquifers in Subunit 1. If the dischargers claim that it is not technically feasible to achieve cleanup standards, the report shall evaluate the alternate standards that can be achieved. Cessation of pumping will require the concurrence of the Board and EPA. Should either party not concur, continued pumping will be required.

In addition, the dischargers may request curtailment of pumping based on submittal of a technical report acceptable to the Executive Officer that includes a demonstration that all chemicals originating from sources on their sites have been removed or cleaned up to the levels required by this Board Order and that any chemicals that remain above the standards required by this Board Order originate from other sources.

COMPLETION DATE: 90 days prior to proposed extraction well pumping curtailment in Subunit 1.

m. TASK 13 - IMPLEMENTATION OF SUBUNIT 1 WELL PUMPING CURTAILMENT: Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task 12.

COMPLETION DATE: 30 days after the Board approves the proposal for extraction well pumping curtailment in Subunit 1.

NONBINDING PRELIMINARY ALLOCATION OF RESPONSIBILITY (NBAR) COMPLETION:

n. TASK 14 - SUBMIT UPDATED, REVISED NBAR REPORT: Submit a technical report acceptable to the Executive Officer containing an updated and revised

proposed NBAR report, based on the Executive Officer's comments on NSC's and AMD's May 1991 draft NBAR reports and any guidance provided by the Executive Officer for completion of the NBAR reports. This report shall be sent by certified mail to all companies named in the report.

COMPLETION DATE: 60 days after request made by the Executive Officer.

STATUS REPORT

o. TASK 15 - FIVE-YEAR STATUS REPORT AND EFFECTIVENESS EVALUATION FOR SUBUNIT 1: Submit a technical report acceptable to the Executive Officer containing the results of any additional investigation in Subunit 1 including the soil remediation study; an evaluation of the effectiveness of installed final cleanup measures and cleanup costs; additional recommended measures to achieve final cleanup objectives and standards, if necessary; a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve cleanup objectives and standards; and the tasks and time schedule necessary to implement any additional final cleanup measures.

This report shall evaluate and document the cleanup of contaminated groundwater, and evaluate and document the removal and/or cleanup of contaminated soil. If safe drinking water levels, through the removal of the chemicals for which this Order specifies cleanup standards, have not been achieved in Subunit 1 and are not expected to be achieved through continued groundwater extraction and/or soil remediation, this report shall also contain an evaluation addressing whether it is technically feasible to achieve drinking-water quality in Subunit 1, and if so, a proposal for procedures to do so.

COMPLETION DATE: September 18, 1996

NEW HEALTH CRITERIA

p. TASK 16 - EVALUATION OF NEW HEALTH CRITERIA: Submit a technical report acceptable to the Executive Officer which contains an evaluation of how the final plan and cleanup standards would be affected, if the concentrations as listed in Specification B.3. and Table 3, change as a result of changes in source-document conclusions or promulgation of drinking water standards, maximum contaminant levels or action levels.

COMPLETION DATE: 60 days after request made by the Executive Officer.

4. All Technical reports submitted must be acceptable to the Executive Officer. The submittal of technical reports evaluating final remedial measures shall include a projection of the cost, effectiveness, benefits, and impact on public health and the environment of each remedial measure. If any additional remedial investigations and feasibility studies are found to be necessary, they shall be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300); Section 25356.1(c) of the California Health and Safety Code; CERCLA guidance

documents with reference to Remedial Investigations, Feasibility Studies, and Removal Actions; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California".

5. If the dischargers are delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the dischargers shall notify the Executive Officer prior to the deadline for the completion date.

6. Technical reports summarizing the status of compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted on a quarterly basis, according to the schedule below, commencing with the report for the fourth quarter 1991, due January 31, 1992.

QUARTER	First	Second	Third	Fourth
PERIOD	Jan.-March	April-June	July-Sept.	Oct.-Dec.
DUE DATE	April 30	July 31	October 31	January 31

The quarterly reports shall include:

a. a summary of work completed since the previous quarterly report, and work projected to be completed by the time of the next quarterly report,
b. appropriately scaled and labeled maps showing the location of all monitoring wells, extraction wells, and existing structures,
c. updated water table and piezometric surface maps for all affected water bearing zones, and isoconcentration maps for key contaminants in all affected water bearing zones, to be included at a minimum in the reports for the second and fourth quarters, or in the event of significant changes,
d. a summary tabulation of all groundwater levels and chemical analysis results for Subunit 1 monitoring wells as specified in the revised Field Sampling Plan,
e. a summary tabulation of volume of extracted groundwater and chemical analysis for all Subunit 1 groundwater extraction wells,
f. a status summary of soil remediation at all source areas, including the actual or projected date of vapor extraction system installation, an evaluation of the effectiveness of the vapor extraction system based on operational and monitoring data, and proposed modifications to the system, if necessary, to achieve soil cleanup standards,
g. an estimate of volume or mass of contaminants removed by each remedial system in the quarter and a cumulative tabulation of the total volume or mass of contaminants removed (total and lbs/day),
h. identification of potential problems which will cause or threaten to cause noncompliance with this Order and what actions are being taken or planned to prevent these obstacles from resulting in noncompliance with

this Order, and

i. in the event of noncompliance with the Provisions and Specifications of this Order, the report shall include written justification for noncompliance and proposed actions and schedule to achieve compliance.

7. On an annual basis beginning on July 31, 1992, or as required by the Executive Officer, the dischargers' July 31 progress reports shall include, but need not be limited to, an evaluation of the progress of cleanup measures and the feasibility of meeting ground water cleanup standards established in this Order. This report shall include a discussion of the efficiency of the existing ground water extraction wells at removing ground water contamination during the previous year. If significant reductions in ground water contamination levels are not being achieved, then the report shall propose construction of new and/or alternative extraction wells in order to increase the efficiency of the ground water extraction systems. If the dischargers propose that it is not technically feasible to meet the cleanup standards established by this Order, the report shall also contain an evaluation of maximum cleanup levels that could be achieved.

   The Executive Officer may approve reduction of the scope of the above report based on a demonstration that the contaminant levels in the groundwater have stabilized and that the predicted change in groundwater quality is insignificant over a one year period.

8. All hydrogeological plans, specifications, reports, and documents shall be signed by or stamped with the seal of a registered geologist, engineering geologist or professional engineer.

9. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain Quality Assurance/Quality Control records for Board review.

10. The dischargers shall maintain in good working order, and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.

11. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be provided to the following agencies:

    a. Santa Clara Valley Water District
    b. Santa Clara County Health Department
    c. City of Santa Clara
    d. City of Sunnyvale
    e. U. S. EPA Region IX

    The Executive Officer may additionally require copies of correspondence, reports and documents pertaining to compliance with the Prohibitions, Specifications, and

Provisions of this Order to be provided to a local repository for public use.

12. The dischargers shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

    a. Entry upon premises in which any contamination sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
    b. Access to copy any records required to be kept under the terms and conditions of this Order.
    c. Inspection of any monitoring equipment or methodology implemented in response to this Order.
    d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the dischargers.

13. The dischargers shall file a report on any changes in site occupancy and ownership associated with the NSC or former UTC facilities described in this Order.

14. If any hazardous substance is discharged to any waters of the state, or discharged and deposited where it is, or probably will be discharged to any waters of the state, the dischargers shall report such discharge to this Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-business hours. A written report shall be filed with the Board within five (5) working days and shall contain information relative to: the nature of waste or contaminant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control, and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effect, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.

15. Pursuant to Water Code Section 13304(c), the dischargers are hereby notified that the Board is entitled to and may seek reimbursement for all reasonable staff oversight costs incurred relating to cleanup of wastes in Subunit 1, abating the effects thereof, or taking other remedial action.

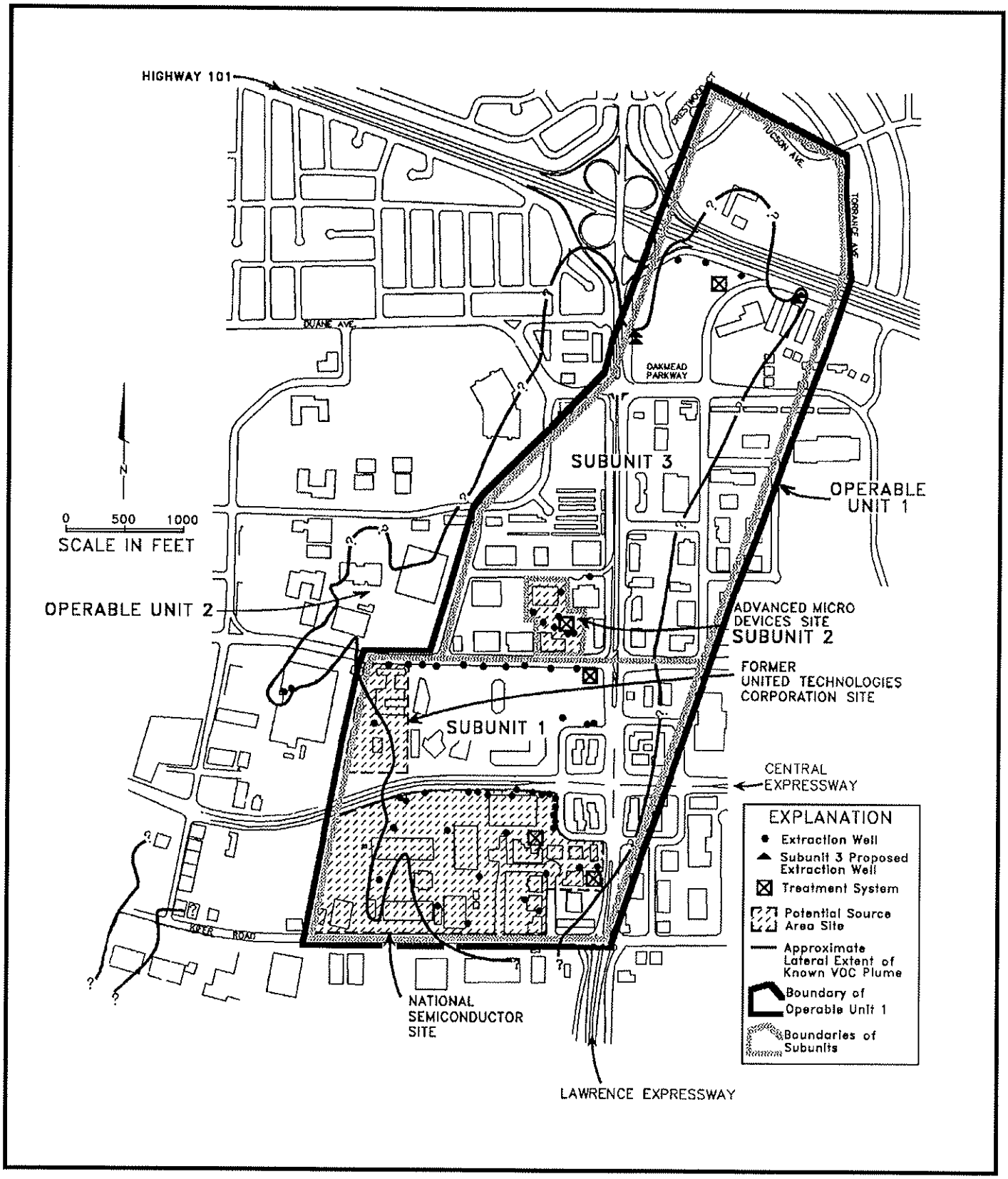
16. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 18, 1991.

Steven R. Ritchie
Executive Officer

Attachments: Figure 1: Study Area Map
Figure 2: General Location Map
Table 1: Chemicals of Concern for Subunit 1
Table 2: Remedial Alternatives Summary for Subunit 1
Table 3: Ground Water Cleanup Standards for Subunit 1

Figure 1 - Map of Study Area



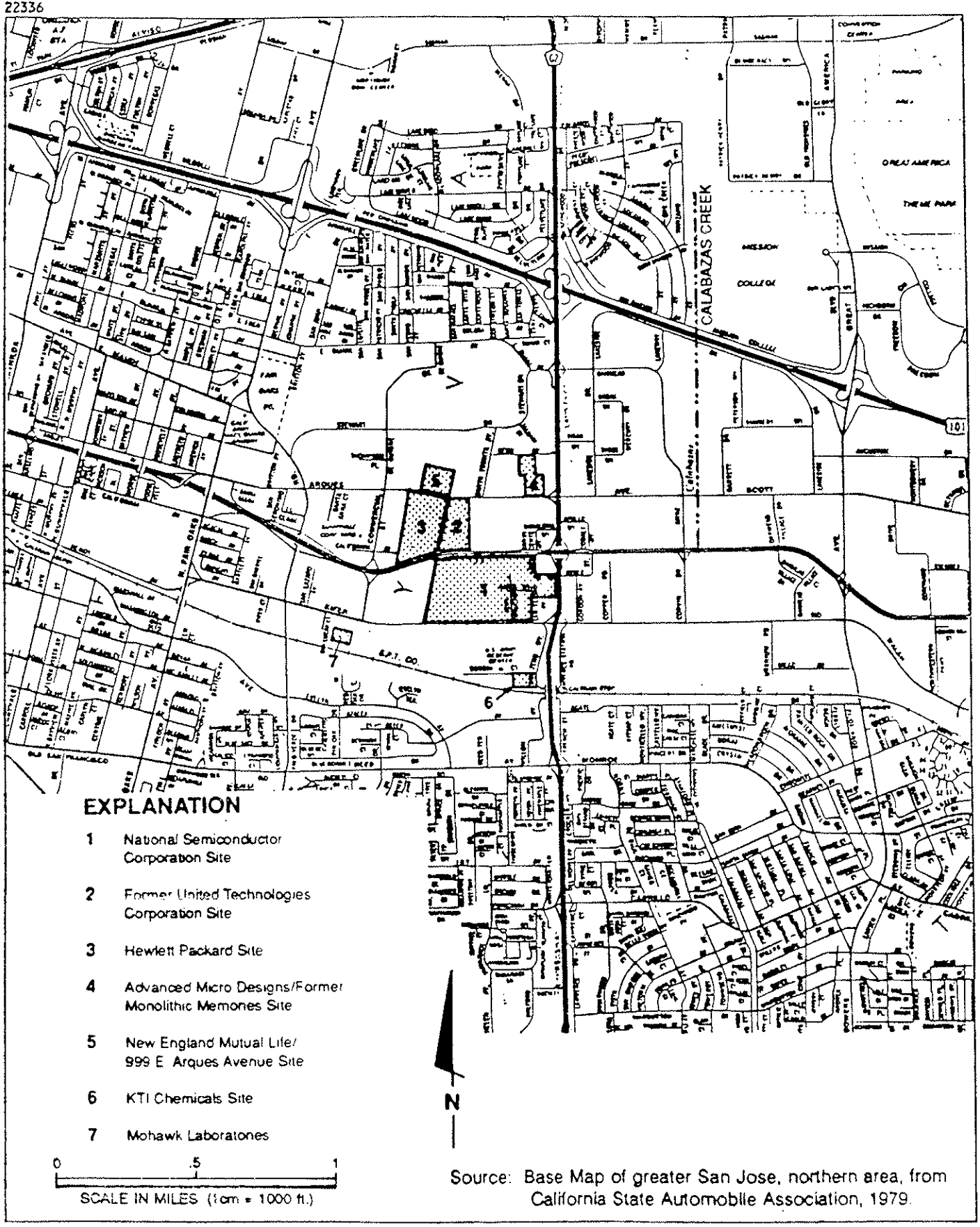


FIGURE 2

General Location Map

TABLE 1

CHEMICALS OF CONCERN

National Semiconductor Corporation
Subunit 1, Operable Unit 1
Santa Clara and Sunnyvale, Santa Clara County

CHEMICAL	MEDIUM		
	Groundwater	Soil	Air
ORGANIC CHEMICALS			
Acetone		X	X
Benzene	X	X	X
Chloroform	X		X
Chloromethane	X		X
4-Chloro-3-methylphenol	X		
1,2-Dichlorobenzene	X		X
1,4-Dichlorobenzene	X		X
1,1-Dichloroethane	X	X	X
1,1-Dichloroethene	X	X	X
cis-1,2-Dichloroethene	X	X	X
trans-1,2-Dichloroethene	X		X
2,4-Dimethylphenol	X		
2,4-Dinitrophenol	X		
Ethylbenzene	X	X	X
Freon 113	X	X	X
2-Methyl-4,6-dinitrophenol	X		
4-Nitrophenol	X		
Pentachlorophenol	X		
Phenol	X	X	
Tetrachloroethene	X	X	X
Toluene		X	X
Trichlorobenzene		X	
1,1,1-Trichloroethane	X	X	X
Trichloroethene	X	X	X
Vinyl Chloride	X		X
Xylenes (total)	X	X	X

Table 2 Comparison of Remedial Alternatives for Subunit 1

Alternative	Protection of Human Health and the Environment	Compliance with ARARs	Long-term Effectiveness	Reduction in Toxicity, Mobility, and Volume	Short-term Effectiveness	Implementability	Cost Present Value (millions)
1 No Action	Not Protective CRR = 2.6×10^{-3} HI = 1^{+}	No	Not Effective	No Reduction of T, M, or V	Not Effective GCT > 200 years	Implementable	$ 1.9
2 Maintain Existing Groundwater Extraction Systems	Protective CRR = 3.1×10^{-5} HI = 0.87	No	Not Effective	Reduction of T, M, and V of groundwater. No Reduction of T, M, and V of soil	Not Effective GCT > 200 years	Implementable (systems currently in place)	$ 3.0
3 Maintain Existing Groundwater Extraction Systems and Remediate Soil	Protective CRR = 3.1×10^{-5} HI = 0.87	Yes	Effective	Reduction of T, M, and V	Effective GCT = 50 to 100 years	Implementable	$ 4.6

CRR = Carcinogenic Risk Range
HI = Hazard Index
GCT = Groundwater Cleanup Time to cleanup to Regional Board standards

TABLE 3

GROUNDWATER CLEANUP STANDARDS
National Semiconductor Corporation
Subunit 1, Operable Unit 1
Santa Clara and Sunnyvale, Santa Clara County

(all values in $\mu g/l$)

COMPOUND	FEDERAL MCLG	FEDERAL MCL	CA ACTION LEVEL	CA MCL	CLEANUP STANDARD
Benzene	0	5	--	1	1
Chloroform	--	100(TT)	--	100(TT)	5
Chloromethane	--	--	--	--	5
4-Chloro-3-methylphenol	--	--	--	--	7
1,2-Dichlorobenzene	600	600	130	--	60
1,4-Dichlorobenzene	75	75	--	5	5
1,1-Dichloroethane	--	--	--	5	5
1,1-Dichloroethene	7	7	--	6	6
cis-1,2-Dichloroethene	70	70	--	6	6
trans-1,2-Dichloroethene	100	100	--	10	10
2,4-Dimethylphenol	--	--	400	--	46
2,4-Dinitrophenol	--	--	--	--	5
Ethylbenzene	700	700	--	680	68
Freon 113	--	--	--	1200	1200
2-Methyl-4,6-dinitrophenol	--	--	--	--	1
Pentachlorophenol	0	1	30	--	1
Phenol	--	--	5	--	5
Tetrachloroethene	0	5	--	5	5
1,1,1-Trichloroethane	200	200	--	200	200
Trichloroethene	0	5	--	5	5
Vinyl Chloride	0	2	--	0.5	0.5
Xylene (total)	10,000	10,000	--	1750	175

MCLG Maximum Contaminant Level Goal
MCL Maximum Contaminant Level
TT MCL for total trihalomethanes
-- no criteria

BUDGET DATA AND ADMINISTRATION SYSTEM
Expenditures By Object / Line Item
for the month ending January 91/92

ORGANIZATION -- Region 2

	POSITIONS/PYS BUDGETED	BUDGETED	EXPENDED	EXPENDITURES BALANCE	% EXPENDED
PERSONAL SERVICES					
Authorized Positions					
Permanant Positions	107.8	$ 4,551,644	$ 2,188,324	$ 2,363,320	48%
Temporary Help	4.1	$ 129,128	$ 61,855	$ 67,273	48%
Overtime		$ 50,144	$ 10,117	$ 40,027	20%
Board Stipend		$ 15,000	$ 5,900	$ 9,100	39%
Total Authorized Positions	111.9	$ 4,745,916			
Salary Increases		$			
Workload & Admin. Charges	0.0	$			
Proposed New Positions	0.0	$			
Partial Year Positions	-1.0	$			
Total Adjustments	-1.0	$			
Total Salaries	110.9	$ 4,745,916			
Salary Savings	-14.1	$- 684,864			
Net Total Salaries	96.8	$ 4,061,052			
Staff Benefits		$ 1,159,209	$ 617,101	$ 542,108	53%
TOTAL PERSONAL SERVICES	96.8	$ 5,220,261	$ 2,883,297	$ 2,336,964	55%
LINE ITEM OPERATING EXPENSES & EQUIPMENT DETAIL					
General Expense		$ 234,408	$ 52,132	$ 182,276	22%
Printing		$ 53,547	$ 25,374	$ 28,173	47%
Communications		$ 117,693	$ 35,881	$ 81,812	30%
Postage		$ 42,474	$ 12,034	$ 30,440	28%
Travel In-State		$ 194,228	$ 36,257	$ 157,971	19%
Travel Out-Of-State		$ 1,214	$	$ 1,214	00%
Training		$ 41,155	$ 7,035	$ 34,120	17%
Facilities Operations		$ 718,702	$ 431,902	$ 286,800	60%
Utilities		$	$	$	00%
Contracts - Internal		$ 267,600	$ 50,000	$ 217,600	19%
Contracts - External		$ 407,355	$ 290,925	$ 116,430	71%
Consolidated Data Center		$	$	$	00%
Central Adm.Serv. - Prorata		$	$	$	00%
Central Adm.Serv. - SWCAP		$	$	$	00%
Equipment		$ 36,401	$ 19,506	$ 16,895	54%
Other		$ 51,296	$ 613	$ 50,683	01%
TOTAL OPERATING EXPENSE & EQUIPMENT		$ 2,166,073	$ 961,659	$ 1,204,414	44%
GRAND TOTAL		$ 7,386,334	$ 3,844,956	$ 3,541,378	52%

Run Date
02/27/92

BUDGET DATA AND ADMINISTRATION SYSTEM
Expenditure Organization Summary
for the month ending January 91/92

	Fund Source		Allotment	Expenditures	% Expended
ORGANIZATION --	Region 2				
	Bay Protection & Toxic Cleanup Fund -- (BPTCPF)	=	$166,330	$00	00%
	Cleanup and Abatement Account-20 -- (CAA-20)	=	$00	$45,082	00%
	Environmental Protection Trust Fund -- (EPTF)	=	$43,090	$40,014	93%
	Pollution Control Surface Water -- (F(106S))	=	$597,273	$611,500	102%
	1990 Clean Water Section 210g1b -- (F(201G1B))	=	$00	$4,078	00%
	Non Point Source Management Planning -- (F(205J5))	=	$86,881	$67,260	77%
	Non-Point Source -- (F(319H))	=	$89,667	$41,923	47%
	Forest Activities -- (F(FA))	=	$00	$00	00%
	Forest Activities FFY 1990 -- (F(FA1))	=	$20,284	$12,027	59%
	Leaking Underground Storage Tanks -- (F(LUST))	=	$128,223	$156,135	122%
	Multi Site Coop. Agreement - South Bay -- (F(MSCA))	=	$1,479,195	$851,349	58%
	San Francisco Bay -- (F(SFB))	=	$00	$7,888	00%
	SLIC-Dept. of Defense -- (F(SLCDOD))	=	$545,732	$145,704	27%
	General -- (G)	=	$2,982,076	$1,681,642	56%
	Hazardous Waste Control Account -- (HWCA)	=	$107,185	$60,242	56%
	Haz. Waste Ctrl. Acct.-Bay Prot. & Toxic -- (HWCA-BAY PROT.)	=	$157,794	$101,742	64%
	Indirect Distributed Cost -- (IDC)	=	$00	$00	00%
	-- (IDC-D)	=	$00	$00	00%
	Old Bond (70 & 74 Grants) -- (OB)	=	$277,215	$169,560	61%
	Leaking Underground Storage Tanks-Reimb. -- (R(LUST))	=	$31,682	$00	00%
	Resource Conservation & Recovery Act -- (R(RCRA))	=	$5,463	$00	00%
	Redevelopment Agency Reimbursements -- (R(REDEVEL))	=	$00	$00	00%
	Department of Energy -- (R(SLCDOE))	=	$123,157	$14,395	12%
	Solid Waste Disposal Account -- (R(SWDA))	=	$85,966	$26,557	31%
	Surface Impound Assessment Account -- (SIAA)	=	$55,382	$199,833	361%
	State/Federal Revolving Fund -Bond -- (SRFBND)	=	$1,277	$00	00%
	State/Federal Revolving Fund-Federal -- (SRFFED)	=	$6,382	$00	00%
	Underground Tank Storage Cleanup Fund -- (UTSCF)	=	$138,824	$26,029	19%
	Underground Tank Storage Fund -- (UTSF)	=	$51,758	$39,043	75%
	Waste Discharge Permit Fund -- (WDPF)	=	$968,935	$31,450	03%
TOTAL --		=	$8,149,771	$4,333,453	53%
GRAND TOTAL --		=	$8,149,771	$4,333,453	53%

for the month ending January 91/92

ORGANIZATION -- Region 2

TASK -- 126 (WDR/NON-CHAPTER 15)

Fund Sources --

		Allotments	Expenditures	% Expended
Waste Discharge Permit Fund	WDPF =	$123,619	$00	00%
	Task Fund Source Totals =	$123,619	$00	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	1.0	$68,500	$00	$00	$00	$00	$68,500	$55,119	$123,619
Expenditures-		$00	$00	$00	$00	$00	$00	$00	$00
Balance --		$68,500	$00	$00	$00	$00	$68,500	$55,119	$123,619
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

COMPONENT TOTALS FOR 120 (WDR / NON Subchapter 15)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	7.1	$329,517	$121,765	$00	$00	$00	$451,282	$265,152	$716,434
Expenditures-		$166,076	$121,765	$00	$00	$00	$287,841	$142,933	$430,775
Balance --		$163,441	$00	$00	$00	$00	$163,441	$122,219	$285,659
% Expended --		50%	100%	00%	00%	00%	64%	54%	60%

TASK -- 131 (SUBCHAPTER 15)

Fund Sources --

		Allotments	Expenditures	% Expended
General	G =	$456,060	$250,428	55%
	Task Fund Source Totals =	$456,060	$250,428	55%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	5.6	$252,711	$00	$00	$00	$00	$252,711	$203,349	$456,060
Expenditures-		$135,045	$00	$00	$00	$00	$135,045	$115,382	$250,428
Balance --		$117,666	$00	$00	$00	$00	$117,666	$87,967	$205,632
% Expended --		53%	00%	00%	00%	00%	53%	57%	55%

for the month ending January 91/92

ORGANIZATION -- Region 2

TASK -- 134 (ENFORCEMENT AT SOLID WASTE LANDFILLS)

Fund Sources --		Allotments	Expenditures	% Expended
Solid Waste Disposal Account	R(SWDA) =	$85,966	$26,557	31%
	Task Fund Source Totals =	$85,966	$26,557	31%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.9	$47,635	$00	$00	$00	$00	$47,635	$38,331	$85,966
Expenditures-		$14,419	$00	$00	$00	$00	$14,419	$12,137	$26,557
Balance --		$33,216	$00	$00	$00	$00	$33,216	$26,194	$59,409
% Expended --		30%	00%	00%	00%	00%	30%	32%	31%

TASK -- 136 (SUBCHAPTER 15)

Fund Sources --		Allotments	Expenditures	% Expended
Waste Discharge Permit Fund	WDPF =	$256,256	$00	00%
	Task Fund Source Totals =	$256,256	$00	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	2.0	$141,996	$00	$00	$00	$00	$141,996	$114,260	$256,256
Expenditures-		$00	$00	$00	$00	$00	$00	$00	$00
Balance --		$141,996	$00	$00	$00	$00	$141,996	$114,260	$256,256
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

COMPONENT TOTALS FOR 130 (Subchapter 15)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	8.5	$442,342	$00	$00	$00	$00	$442,342	$355,940	$798,282
Expenditures-		$149,465	$00	$00	$00	$00	$149,465	$127,520	$276,985
Balance --		$292,877	$00	$00	$00	$00	$292,877	$228,420	$521,297
% Expended --		34%	00%	00%	00%	00%	34%	36%	35%

for the month ending January 91/92

ORGANIZATION -- Region 2

COMPONENT TOTALS FOR 140 (RCRA)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	1.3	$62,420	$00	$00	$00	$00	$62,420	$50,228	$112,648
Expenditures-		$33,214	$00	$00	$00	$00	$33,214	$28,046	$61,261
Balance --		$29,206	$00	$00	$00	$00	$29,206	$22,182	$51,388
% Expended --		53%	00%	00%	00%	00%	53%	56%	54%

TASK -- 151 (TREND MONITORING)

Fund Sources --

		Allotments	Expenditures	% Expended
Old Bond (70 & 74 Grants)	08 =	$25,967	$47,246	182%
	Task Fund Source Totals =	$25,967	$47,246	182%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.3	$14,389	$00	$00	$00	$00	$14,389	$11,578	$25,967
Expenditures-		$25,471	$00	$00	$00	$00	$25,471	$21,775	$47,246
Balance --	-	$11,082	$00	$00	$00	$00 -	$11,082 -	$10,197	- $21,279
% Expended --		177%	00%	00%	00%	00%	177%	188%	182%

TASK -- 156 (Trend Monitoring G)

Fund Sources --

		Allotments	Expenditures	% Expended
General	G =	$30,000	$00	00%
	Task Fund Source Totals =	$30,000	$00	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.0	$00	$30,000	$00	$00	$00	$30,000	$00	$30,000
Expenditures-		$00	$00	$00	$00	$00	$00	$00	$00
Balance --		$00	$30,000	$00	$00	$00	$30,000	$00	$30,000
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

COMPONENT TOTALS FOR 150 (Trend Monitoring)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.3	$14,389	$30,000	$00	$00	$00	$44,389	$11,578	$55,967
Expenditures-		$25,471	$00	$00	$00	$00	$25,471	$21,775	$47,246
Balance --	-	$11,082	$30,000	$00	$00	$00	$18,918 -	$10,197	$8,721
% Expended --		177%	00%	00%	00%	00%	57%	188%	84%

for the month ending January 91/92

ORGANIZATION -- Region 2

TASK -- 166 (SLIC DEPT. OF DEFENSE OVERSIGHT)

Fund Sources --		Allotments	Expenditures	% Expended
SLIC-Dept. of Defense	F(SLCDOD) =	$545,732	$145,704	27%
	Task Fund Source Totals =	$545,732	$145,704	27%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	3.3	$192,685	$198,000	$00	$00	$00	$390,685	$155,047	$545,732
Expenditures-		$78,171	$00	$00	$00	$00	$78,171	$67,533	$145,704
Balance --		$114,514	$198,000	$00	$00	$00	$312,514	$87,514	$400,028
% Expended --		41%	00%	00%	00%	00%	20%	44%	27%

COMPONENT TOTALS FOR 160 (Spills, Leaks, Investigations/Cleanups)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	6.9	$357,522	$198,000	$00	$00	$00	$555,522	$287,685	$843,207
Expenditures-		$275,495	$00	$00	$00	$00	$275,495	$238,205	$513,700
Balance --		$82,027	$198,000	$00	$00	$00	$280,027	$49,480	$329,508
% Expended --		77%	00%	00%	00%	00%	50%	83%	61%

TASK -- 171 (FOREST ACTIVITIES)

Fund Sources --		Allotments	Expenditures	% Expended
Forest Activities	F(FA) =	$00	$00	00%
	Task Fund Source Totals =	$00	$00	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.0	$00	$00	$00	$00	$00	$00	$00	$00
Expenditures-		$00	$00	$00	$00	$00	$00	$00	$00
Balance --		$00	$00	$00	$00	$00	$00	$00	$00
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

for the month ending January 91/92

ORGANIZATION -- Region 2

TASK -- 192 (TPCA-NON-SITE SPECIFIC)

Fund Sources --		Allotments	Expenditures	% Expended
Surface Impound Assessment Account	SIAA =	$10,462	$1,970	19%
	Task Fund Source Totals =	$10,462	$1,970	19%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.1	$5,797	$00	$00	$00	$00	$5,797	$4,665	$10,462
Expenditures-		$6,685	$00	$00	$00	$00	$6,685	$4,715	$1,970
Balance --		- $888	$00	$00	$00	$00	- $888	$9,380	$8,492
% Expended --		115%	00%	00%	00%	00%	115%	-101%	19%

TASK -- 193 (TPCA-SITE SPECIFIC)

Fund Sources --		Allotments	Expenditures	% Expended
Surface Impound Assessment Account	SIAA =	$44,920	$197,863	440%
	Task Fund Source Totals =	$44,920	$197,863	440%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.5	$24,891	$00	$00	$00	$00	$24,891	$20,029	$44,920
Expenditures-		$85,587	$00	$00	$00	$00	$85,587	$112,276	$197,863
Balance --		- $60,696	$00	$00	$00	$00	- $60,696	- $92,247	- $152,943
% Expended --		344%	00%	00%	00%	00%	344%	561%	440%

COMPONENT TOTALS FOR 190 (Toxic Pits Cleanup Act (TPCA))

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.7	$34,927	$00	$00	$00	$00	$34,927	$28,105	$63,032
Expenditures-		$92,914	$00	$00	$00	$00	$92,914	$108,164	$201,078
Balance --		- $57,987	$00	$00	$00	$00	- $57,987	- $80,059	- $138,046
% Expended --		266%	00%	00%	00%	00%	266%	385%	319%

for the month ending January 91/92

ORGANIZATION -- Region 2

TASK -- 271 (SPECIAL INVESTIGATIONS)

Fund Sources --		Allotments	Expenditures	% Expended
Old Bond (70 & 74 Grants)	OB =	$31,064	$22,779	73%
	Task Fund Source Totals =	$31,064	$22,779	73%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.5	$17,213	$00	$00	$00	$00	$17,213	$13,851	$31,064
Expenditures-		$12,630	$00	$00	$00	$00	$12,630	$10,149	$22,779
Balance --		$4,583	$00	$00	$00	$00	$4,583	$3,702	$8,285
% Expended --		73%	00%	00%	00%	00%	73%	73%	73%

COMPONENT TOTALS FOR 270 (Special Investigations)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.5	$17,213	$00	$00	$00	$00	$17,213	$13,851	$31,064
Expenditures-		$12,630	$00	$00	$00	$00	$12,630	$10,149	$22,779
Balance --		$4,583	$00	$00	$00	$00	$4,583	$3,702	$8,285
% Expended --		73%	00%	00%	00%	00%	73%	73%	73%

TASK -- 301 (UST)

Fund Sources --		Allotments	Expenditures	% Expended
Underground Tank Storage Fund	UTSF =	$51,758	$39,043	75%
	Task Fund Source Totals =	$51,758	$39,043	75%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	1.8	$28,680	$00	$00	$00	$00	$28,680	$23,078	$51,758
Expenditures-		$20,861	$00	$00	$00	$00	$20,861	$18,182	$39,043
Balance --		$7,819	$00	$00	$00	$00	$7,819	$4,896	$12,715
% Expended --		73%	00%	00%	00%	00%	73%	79%	75%

for the month ending January 91/92

ORGANIZATION -- Region 2

TASK -- 325 (LUST FEDERAL OVERSITE)

Fund Sources --		Allotments	Expenditures	% Expended
Leaking Underground Storage Tanks	F(LUST) =	$128,223	$156,135	122%
	Task Fund Source Totals =	$128,223	$156,135	122%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	1.7	$71,051	$00	$00	$00	$00	$71,051	$57,172	$128,223
Expenditures-		$85,153	$00	$00	$00	$00	$85,153	$70,982	$156,135
Balance --		- $14,102	$00	$00	$00	$00 -	$14,102 -	$13,810	- $27,912
% Expended --		120%	00%	00%	00%	00%	120%	124%	122%

TASK -- 329 (LEAKING UST-REIMB.)

Fund Sources --		Allotments	Expenditures	% Expended
Leaking Underground Storage Tanks-Reimb.	R(LUST) =	$31,682	$00	00%
	Task Fund Source Totals =	$31,682	$00	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.5	$17,556	$00	$00	$00	$00	$17,556	$14,126	$31,682
Expenditures-		$00	$00	$00	$00	$00	$00	$00	$00
Balance --		$17,556	$00	$00	$00	$00	$17,556	$14,126	$31,682
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

COMPONENT TOTALS FOR 320 (Leaking Underground Storage Tanks (LUST))

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	4.0	$165,532	$00	$00	$00	$00	$165,532	$133,197	$298,729
Expenditures-		$98,365	$00	$00	$00	$00	$98,365	$83,798	$182,164
Balance --		$67,167	$00	$00	$00	$00	$67,167	$49,399	$116,565
% Expended --		59%	00%	00%	00%	00%	59%	63%	61%

for the month ending January 91/92

ORGANIZATION -- Region 2

TASK -- 729 (MSCA NON-SITE ACTIVITIES)

Fund Sources --		Allotments	Expenditures	% Expended
Multi Site Coop. Agreement - South Bay	F(MSCA) =	$328,724	$11,848	04%
	Task Fund Source Totals =	$328,724	$11,848	04%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	4.2	$180,434	$3,100	$00	$00	$00	$183,534	$145,190	$328,724
Expenditures-		$70,832	$11,848	$00	$2,363	$00	$85,042 -	$73,194	$11,848
Balance --		$109,602 -	$8,748	$00 -	$2,363	$00	$98,492	$218,384	$316,877
% Expended --		39%	382%	00%	00%	00%	46%	- 50%	04%

TASK -- 730 (MSCA SITE COMMUNITY INVOLVEMENT)

Fund Sources --		Allotments	Expenditures	% Expended
Multi Site Coop. Agreement - South Bay	F(MSCA) =	$130,737	$129,439	99%
	Task Fund Source Totals =	$130,737	$129,439	99%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	1.4	$31,217	$74,400	$00	$00	$00	$105,617	$25,120	$130,737
Expenditures-		$4,924	$115,415	$00	$4,888	$00	$125,228	$4,211	$129,439
Balance --		$26,293 -	$41,015	$00 -	$4,888	$00 -	$19,611	$20,909	$1,298
% Expended --		16%	155%	00%	00%	00%	119%	17%	99%

COMPONENT TOTALS FOR 360 (Multi Site Coop Agreement (MSCA) So. Bay)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	15.5	$645,988	$310,000	$3,400	$00	$00	$959,388	$519,807	$1,479,195
Expenditures-		$303,880	$219,160	$00	$7,431	$00	$530,471	$320,877	$851,348
Balance --		$342,108	$90,840	$3,400 -	$7,431	$00	$428,917	$198,930	$627,847
% Expended --		47%	71%	00%	00%	00%	55%	62%	58%

for the month ending January 91/92

ORGANIZATION -- Region 2

COMPONENT TOTALS FOR 370 (Above Ground Tanks)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.5	$23,877	$00	$00	$00	$00	$23,877	$19,213	$43,090
Expenditures-		$21,661	$00	$00	$00	$00	$21,661	$18,353	$40,015
Balance --		$2,216	$00	$00	$00	$00	$2,216	$860	$3,075
% Expended --		91%	00%	00%	00%	00%	91%	96%	93%

TASK -- 401 (WQ CONTROL PLANNING)

Fund Sources --		Allotments	Expenditures	% Expended
General	G =	$90,705	$45,353	50%
Old Bond (70 & 74 Grants)	OB =	$139,512	$69,757	50%
	Task Fund Source Totals =	$230,217	$115,110	50%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	2.5	$127,567	$00	$00	$00	$00	$127,567	$102,650	$230,217
Expenditures-		$60,995	$00	$00	$00	$00	$60,995	$54,115	$115,110
Balance --		$66,572	$00	$00	$00	$00	$66,572	$48,535	$115,107
% Expended --		48%	00%	00%	00%	00%	48%	53%	50%

TASK -- 402 (WQ CONTROL PLANNING)

Fund Sources --		Allotments	Expenditures	% Expended
General	G =	$20,505	$2,081	10%
	Task Fund Source Totals =	$20,505	$2,081	10%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.4	$11,362	$00	$00	$00	$00	$11,362	$9,143	$20,505
Expenditures-		$1,232	$00	$00	$00	$00	$1,232	$849	$2,081
Balance --		$10,130	$00	$00	$00	$00	$10,130	$8,294	$18,424
% Expended --		11%	00%	00%	00%	00%	11%	09%	10%

COMPONENT TOTALS FOR 400 (WQ Control Planning)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	2.9	$138,929	$00	$00	$00	$00	$138,929	$111,793	$250,722
Expenditures-		$62,228	$00	$00	$00	$00	$62,228	$54,964	$117,191
Balance --		$76,701	$00	$00	$00	$00	$76,701	$56,829	$133,531
% Expended --		45%	00%	00%	00%	00%	45%	49%	47%

Detail Task Expenditures

for the month ending January 91/92

ORGANIZATION -- Region 2

TASK -- 435 (NPS IMP PROJECTS & ACTIVITIES)

Fund Sources --		Allotments	Expenditures	% Expended
Non Point Source Management Planning	F(205J5) =	$00	$28,894	00%
	Task Fund Source Totals =	$00	$28,894	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.0	$00	$00	$00	$00	$00	$00	$00	$00
Expenditures-		$15,557	$00	$00	$00	$00	$15,557	$13,337	$28,894
Balance --	-	$15,557	$00	$00	$00	$00 -	$15,557 -	$13,337	- $28,894
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

TASK -- 436 (Nonpoint Source Section 319(h))

Fund Sources --		Allotments	Expenditures	% Expended
Non-Point Source	F(319H) =	$89,667	$41,923	47%
	Task Fund Source Totals =	$89,667	$41,923	47%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	1.0	$49,686	$00	$00	$00	$00	$49,686	$39,981	$89,667
Expenditures-		$22,216	$00	$00	$00	$00	$22,216	$19,706	$41,923
Balance --		$27,470	$00	$00	$00	$00	$27,470	$20,275	$47,744
% Expended --		45%	00%	00%	00%	00%	45%	49%	47%

TASK -- 437 (Nonpoint Source 201(g))

Fund Sources --		Allotments	Expenditures	% Expended
1990 Clean Water Section 210g1b	F(201G1B) =	$00	$4,078	00%
	Task Fund Source Totals =	$00	$4,078	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.0	$00	$00	$00	$00	$00	$00	$00	$00
Expenditures-		$2,070	$00	$00	$00	$00	$2,070	$2,008	$4,078
Balance --	-	$2,070	$00	$00	$00	$00 -	$2,070 -	$2,008	- $4,078
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

for the month ending January 91/92

ORGANIZATION -- Region 2

TASK -- 453 (BAY PROT. & TOXIC CLEANUP-FED.FUNDS)

Fund Sources --		Allotments	Expenditures	% Expended
Bay Protection & Toxic Cleanup Fund	BPTCPF =	$166,330	$00	00%
	Task Fund Source Totals =	$166,330	$00	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	1.8	$91,612	$00	$1,000	$00	$00	$92,612	$73,718	$166,330
Expenditures-		$00	$00	$00	$00	$00	$00	$00	$00
Balance --		$91,612	$00	$1,000	$00	$00	$92,612	$73,718	$166,330
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

COMPONENT TOTALS FOR 450 (Bay Protection and Toxic Cleanup)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	3.7	$178,494	$00	$2,000	$00	$00	$180,494	$143,630	$324,124
Expenditures-		$59,151	$00	$00	$00	$00	$59,151	$50,479	$109,630
Balance --		$119,343	$00	$2,000	$00	$00	$121,343	$93,151	$214,494
% Expended --		33%	00%	00%	00%	00%	33%	35%	34%

TASK -- 481 (NON-CMAG PROJECT)

Fund Sources --		Allotments	Expenditures	% Expended
General	G =	$45,958	$00	00%
	Task Fund Source Totals =	$45,958	$00	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.5	$25,466	$00	$00	$00	$00	$25,466	$20,492	$45,958
Expenditures-		$00	$00	$00	$00	$00	$00	$00	$00
Balance --		$25,466	$00	$00	$00	$00	$25,466	$20,492	$45,958
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

COMPONENT TOTALS FOR 480 (Non-CMAG Eligible Projects)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.5	$25,466	$00	$00	$00	$00	$25,466	$20,492	$45,958
Expenditures-		$00	$00	$00	$00	$00	$00	$00	$00
Balance --		$25,466	$00	$00	$00	$00	$25,466	$20,492	$45,958
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

ORGANIZATION -- Region 2

TASK -- 552 (TECHNICAL ASSISTANCE)

Fund Sources --		Allotments	Expenditures	% Expended
Old Bond (70 & 74 Grants)	OB =	$80,672	$29,778	37%
	Task Fund Source Totals =	$80,672	$29,778	37%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.8	$44,702	$00	$00	$00	$00	$44,702	$35,970	$80,672
Expenditures-		$16,072	$00	$00	$00	$00	$16,072	$13,706	$29,778
Balance --		$28,630	$00	$00	$00	$00	$28,630	$22,264	$50,894
% Expended --		36%	00%	00%	00%	00%	36%	38%	37%

COMPONENT TOTALS FOR 550 (Technical Assisstance)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	1.0	$57,766	$00	$00	$00	$00	$57,766	$46,482	$104,248
Expenditures-		$19,217	$00	$00	$00	$00	$19,217	$16,334	$35,551
Balance --		$38,549	$00	$00	$00	$00	$38,549	$30,148	$68,697
% Expended --		33%	00%	00%	00%	00%	33%	35%	34%

TASK -- 591 (WQ PROGRAM MANAGEMENT)

Fund Sources --		Allotments	Expenditures	% Expended
Indirect Distributed Cost	IDC =	$00	$00	00%
	Task Fund Source Totals =	$00	$00	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	6.0	$341,861	$15,000	$31,001	$00	$00	$387,862 -	$387,862	$00
Expenditures-		$268,223	$00	$19,506	$00	$00	$287,729 -	$287,729	$00
Balance --		$73,638	$15,000	$11,495	$00	$00	$100,133 -	$100,133	$00
% Expended --		78%	00%	63%	00%	00%	74%	74%	00%

COMPONENT TOTALS FOR 590 (WQ Program Administration)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	6.0	$341,861	$15,000	$31,001	$00	$00	$387,862 -	$387,862	$00
Expenditures-		$268,223	$00	$19,506	$00	$00	$287,729 -	$287,729	$00
Balance --		$73,638	$15,000	$11,495	$00	$00	$100,133 -	$100,133	$00
% Expended --		78%	00%	63%	00%	00%	74%	74%	00%

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ORGANIZATION -- Region 2

TASK -- 801 (Paid Time Off)

Fund Sources --

		Allotments	Expenditures	% Expended
IDC-D	=	$00	$00	00%
Task Fund Source Totals	=	$00	$00	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.0	$730,837	$00	$00	$00	$00	$730,837 -	$730,837	$00
Expenditures-		$518,492	$00	$00	$00	$00	$518,492 -	$518,492	$00
Balance --		$212,345	$00	$00	$00	$00	$212,345 -	$212,345	$00
% Expended --		71%	00%	00%	00%	00%	71%	71%	00%

COMPONENT TOTALS FOR 800 (Operating Expenses/PTO)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.0	$730,837	$00	$00	$1,454,717	$00	$2,185,554 -	$2,185,554	$00
Expenditures-		$518,492	$00	$00	$592,688	$613	$1,111,793 -	$1,111,793	$00
Balance --		$212,345	$00	$00	$862,029 -	$613	$1,073,761 -	$1,073,761	$00
% Expended --		71%	00%	00%	41%	00%	51%	51%	00%

TASK -- 810 (Unidentified Personal Costs)

Fund Sources --

		Allotments	Expenditures	% Expended
General G	=	$00	$4,272	00%
Task Fund Source Totals	=	$00	$4,272	00%

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.0	$00	$00	$00	$00	$00	$00	$00	$00
Expenditures-		$4,272	$00	$00	$00	$00	$4,272	$00	$4,272
Balance --	-	$4,272	$00	$00	$00	$00 -	$4,272	$00 -	$4,272
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

COMPONENT TOTALS FOR 810 (Unidentified Payroll)

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Direct	Indirect	TOTALS
Allotments --	0.0	$00	$00	$00	$00	$00	$00	$00	$00
Expenditures-		$4,272	$00	$00	$00	$00	$4,272	$00	$4,272
Balance --	-	$4,272	$00	$00	$00	$00 -	$4,272	$00 -	$4,272
% Expended --		00%	00%	00%	00%	00%	00%	00%	00%

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ORGANIZATION -- Region 2

GRAND TOTALS FOR for the month ending January 91/92

	P.Y.'s	Pers.Svcs	Contracts	Equip.	Op. Exp.	Other	Total Direct	Total Indirect	TASK TOTALS
Allotments --	96.8	$5,220,262	$674,955	$36,401	$1,454,717	$00	$7,386,335	$763,436	$8,149,771
Expenditures-		$2,883,298	$340,925	$19,506	$600,615	$613	$3,844,958	$488,494	$4,333,452
Balance --		$2,336,964	$334,030	$16,895	$854,102 -	$613	$3,541,377	$274,942	$3,816,319
% Expended --		55%	51%	54%	41%	00%	52%	64%	53%